

SW51+ Telefunken EF184 300R DISTORTION UNBAL REPORT

Overall Result: PASS

SUMMARY:	RESULT
A01 Tube Freq Resp 5Hz - 96KHz 0dBu	OK
A04 THD+N,THD, nth-HD 2 3 4 - THD+N minus 2nd and 3rd harmonics	✓
A07 Noise, SNR	✓
A16 FFT residual noise	✓
A17 Tube THD+N and 4+HD+N vs Ampl +10dBu start unBal	OK
A18 - gain linearity 4+HD+N - unBal output - 440Hz	OK
A19 - gain linearity 4+HD+N - unBal output - 40Hz	OK
A20_MT_Analogue_31Tones	OK

KEY: ✓ = Test passes, ✗ = Test fails, OK = Test has run but has no limit checking, (✗) = Test has failed to run or has not completed, [✓] = Test passes but is not required, [✗] = Test fails but is not required, ? = Test is required but has not been run.
- = Test is not required.

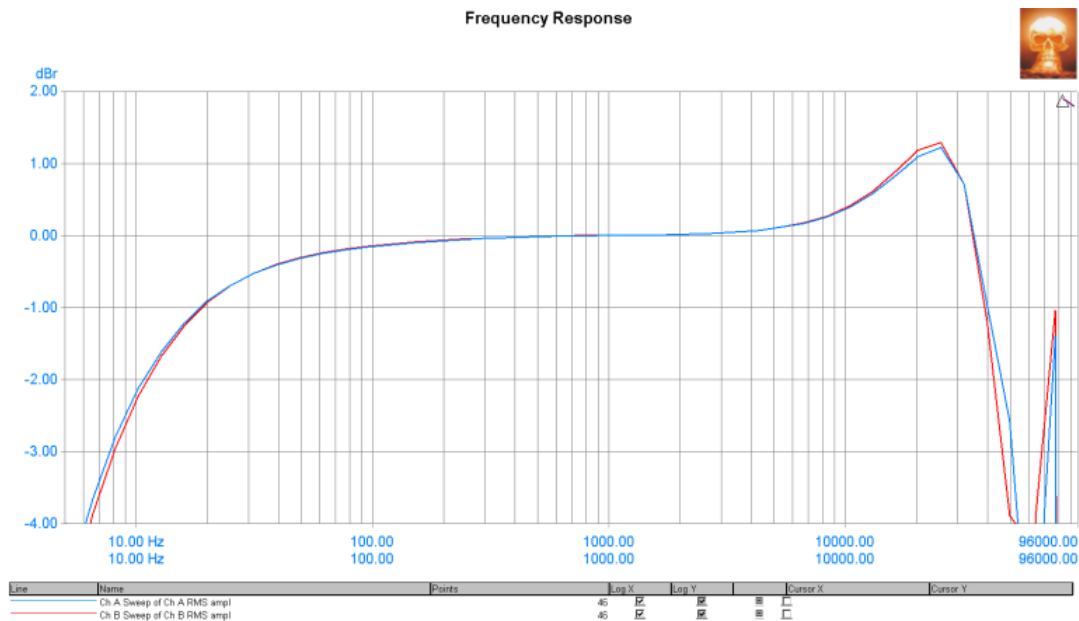
[Back to top](#)

A01 Tube Freq Resp 5Hz - 96KHz 0dBu: Not limit checked.

Measured at 11/29/2020 1:36:40 PM

Signal Analyzer Readings		
RMS amplitude (Channel A)	0.003 dBu	Not limit checked.
RMS amplitude (Channel B)	0.006 dBu	Not limit checked.

CTA Readings		
Gain (Channel A RMS)	0.003 dB	Not limit checked.
Gain (Channel B RMS)	0.006 dB	Not limit checked.
Settings: Generator relative, 22 Hz - 22 kHz, unweighted RMS with 1/3rd octave band-pass filter at the generator frequency		



[Back to top](#)

A04 THD+N,THD, nth-HD 2 3 4 - THD+N minus 2nd and 3rd harmonics: PASSED

Measured at 11/29/2020 1:36:57 PM

Signal Analyzer Readings		
RMS amplitude (Channel A)	0.008 dBu	Not limit checked.
RMS amplitude (Channel B)	0.012 dBu	Not limit checked.

CTA Readings

THD+N - relative (Channel A RMS)

0.24841 %

< 200 %
> 0.8 %

THD+N - relative (Channel B RMS)

0.27730 %

< 200 %
> 0 %

Settings: Self relative, 22 Hz - 22 kHz, unweighted RMS with 1/3rd octave band-reject filter at the input frequency



FFT Detector Readings		
THD (Channel A)	0.26359 %	< 200 % > 0 %
THD (Channel B)	0.29758 %	< 200 % > 0 %
FFTD 1 Settings: Self relative, 22 Hz - 22 kHz, unweighted with band-pass notch filters from the 2nd to 10th harmonics		
2nd Harmonic Distortion (Channel A)	0.26120 %	< 200 % > 0 %
2nd Harmonic Distortion (Channel B)	0.29650 %	< 200 % > 0 %
FFTD 2 Settings: Self relative, 22 Hz - 22 kHz, unweighted with band-pass notch filter at the 2nd harmonic		
3rd Harmonic Distortion (Channel A)	0.03532 %	< 200 % > 0 %
3rd Harmonic Distortion (Channel B)	0.02537 %	< 200 % > 0 %
FFTD 3 Settings: Self relative, 22 Hz - 22 kHz, unweighted with band-pass notch filter at the 3rd harmonic		
4th Harmonic Distortion (Channel A)	0.00113 %	Not limit checked.
4th Harmonic Distortion (Channel B)	0.00067 %	Not limit checked.
FFTD 4 Settings: Self relative, 22 Hz - 22 kHz, unweighted with band-pass notch filter at the 4th harmonic		
5th Harmonic Distortion (Channel A)	0.00156 %	Not limit checked.
5th Harmonic Distortion (Channel B)	0.00141 %	Not limit checked.
FFTD 5 Settings: Self relative, 22 Hz - 22 kHz, unweighted with band-pass notch filter at the 5th harmonic		
4+HD + N (Channel A)	0.00303 %	< 0.05 % > 0 %
4+HD + N (Channel B)	0.00272 %	< 0.05 % > 0 %
FFTD 6 Settings: Self relative, 22 Hz - 22 kHz, unweighted with band-reject notch filters, fundamental to the 3rd harmonic		
Hum (Channel A)	0.00093 %	< 0.017783 % > 0 %
Hum (Channel B)	0.00037 %	< 0.017783 % > 0 %
FFTD 7 Settings: Self relative, 22 Hz - 22 kHz, unweighted with window notch (14 bins) band-pass filter at 60 Hz		
Noise (residual) (Channel A)	0.00229 %	< 0.017783 % > 0 %
Noise (residual) (Channel B)	0.00220 %	< 0.017783 % > 0 %
FFTD 8 Settings: Self relative, 22 Hz - 22 kHz, unweighted with band-reject notch filters, fundamental to the 10th harmonic		

[Back to top](#)

A07 Noise, SNR: PASSED

Measured at 11/29/2020 1:38:01 PM

CTA Readings		
Amplitude (Channel A RMS)	-41.992 dBu	Not limit checked.
Amplitude (Channel B RMS)	-41.988 dBu	Not limit checked.
Settings: 22 Hz - 22 kHz, unweighted RMS		

FFT Detector Readings		
Noise (unweighted) (Channel A)	-103.896 dBr	< 200 dBr > -200 dBr
Noise (unweighted) (Channel B)	-105.083 dBr	< 200 dBr > -200 dBr
FFTD 1 Settings: 22 Hz - 22 kHz, unweighted with window notch (14 bins) band-reject filter at the generator frequency		
SNR (Channel A)	-104.019 dBr	< 200 dBr > -200 dBr
SNR (Channel B)	-105.227 dBr	< 200 dBr > -200 dBr
FFTD 2 Settings: 22 Hz - 22 kHz, unweighted with 1/3rd octave band-reject filter at the generator frequency		

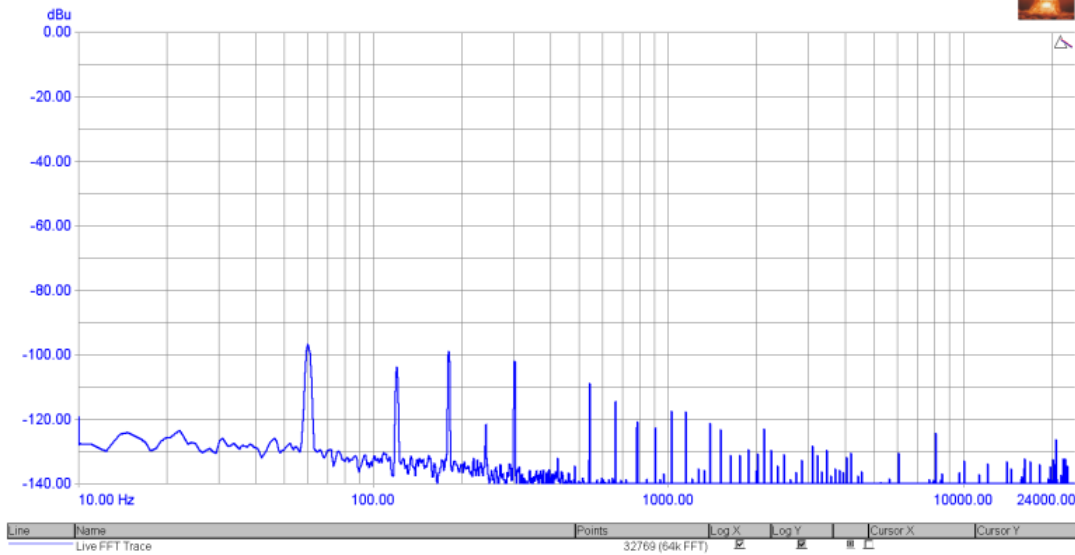
[Back to top](#)

A16 FFT residual noise: PASSED

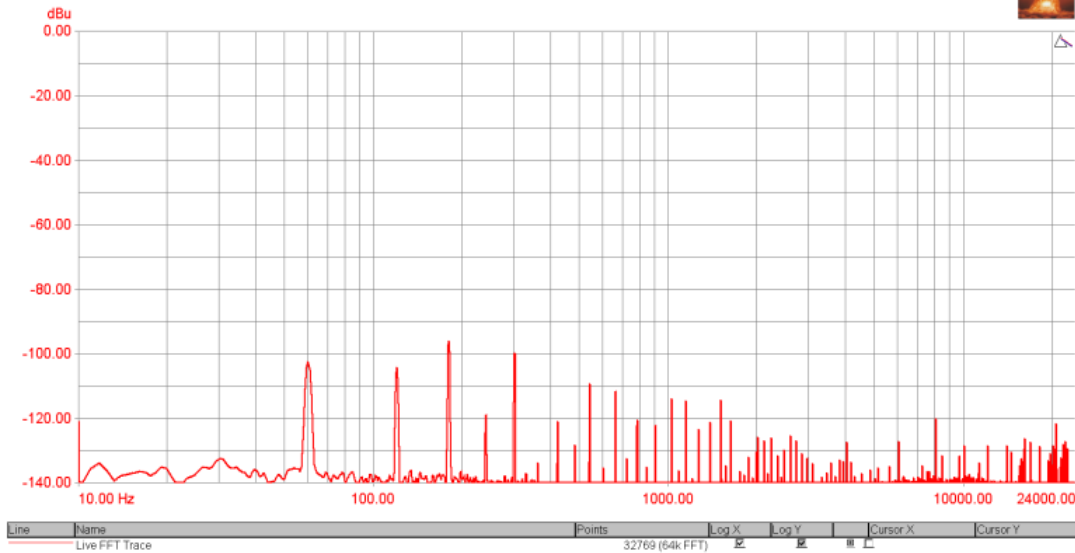
Measured at 11/29/2020 1:38:03 PM

Signal Analyzer Readings		
RMS amplitude (Channel A)	-87.886 dBu	Not limit checked.
RMS amplitude (Channel B)	-87.229 dBu	Not limit checked.

FFT residual noise



FFT residual noise



FFT Detector Readings

Noise (residual) (Channel A)	-92.983 dBu	< -80 dBu > -140 dBu
Noise (residual) (Channel B)	-95.366 dBu	< -80 dBu > -140 dBu
FFTD 1 Settings: 22 Hz - 22 kHz, unweighted with band-reject notch filters, fundamental to the 10th harmonic		

[Back to top](#)

A17 Tube THD+N and 4+HD+N vs Ampl +10dBu start unBal: Not limit checked.

Measured at 11/29/2020 1:39:24 PM

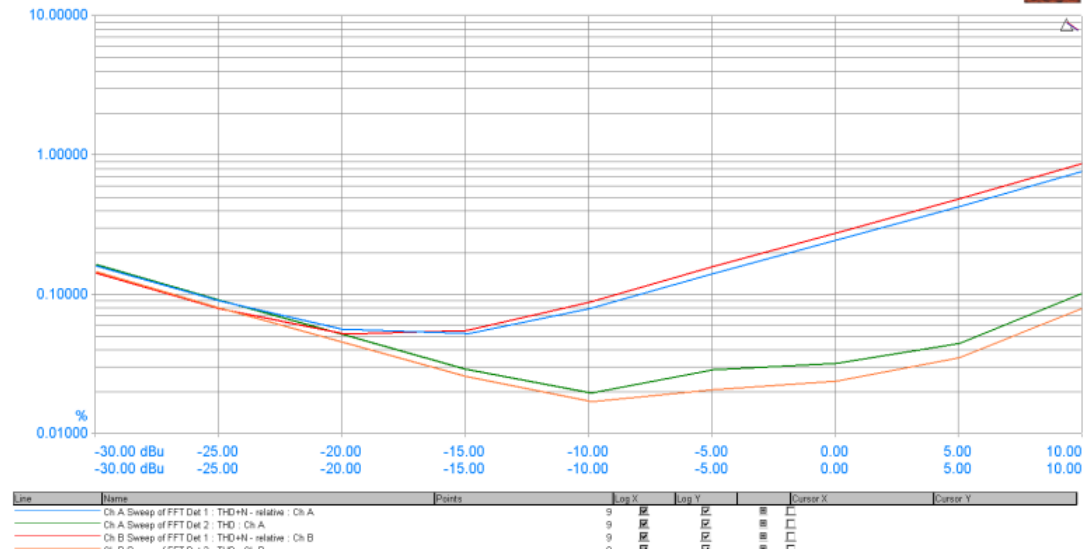
CTA Readings

Amplitude (Channel A RMS)	0.011 dBu	Not limit checked.
Amplitude (Channel B RMS)	0.015 dBu	Not limit checked.
Settings: 22 Hz - 22 kHz, unweighted RMS		

FFT Detector Readings

THD+N - relative (Channel A)	0.251 %	Not limit checked.
THD+N - relative (Channel B)	0.281 %	Not limit checked.
FFTD 1 Settings: Self relative, 22 Hz - 22 kHz, unweighted with 1/3rd octave band-reject filter at the input frequency		
4+HD+N	0.024 %	Not limit checked.
4+HD+N	0.020 %	Not limit checked.
FFTD 2 Settings: Self relative, 22 Hz - 22 kHz, unweighted with band-reject notch filters, fundamental to the 2nd harmonic		

THD+N and 4+HD+N vs Amplitude


[Back to top](#)

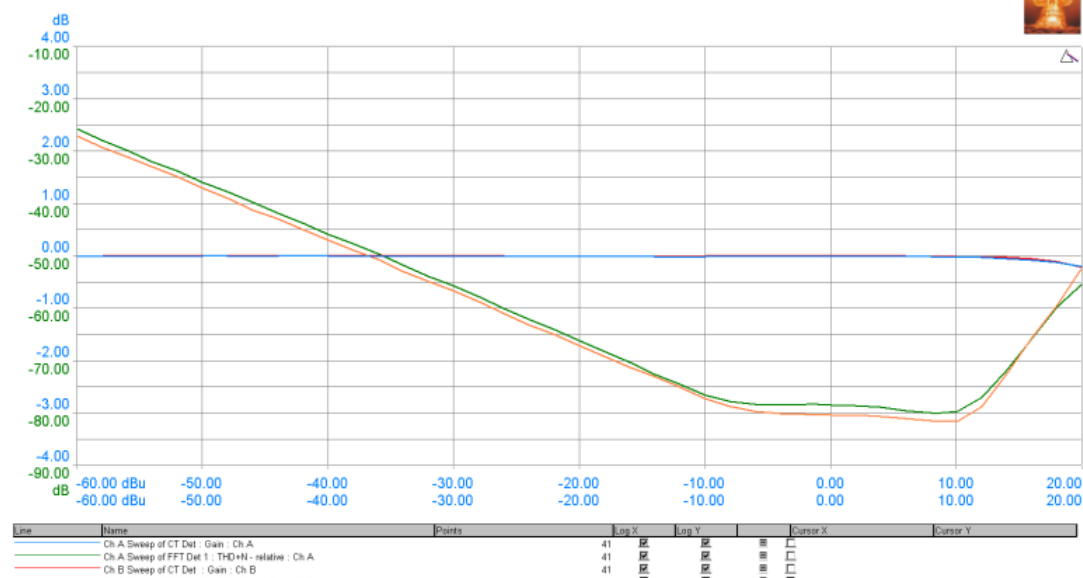
A18 - gain linearity 4+HD+N - unBal output - 440Hz: Not limit checked.

Measured at 11/29/2020 1:40:18 PM

Signal Analyzer Readings		
Frequency (Channel A)	440.000 Hz	Not limit checked.

CTA Readings		
Gain (Channel A RMS)	-0.017 dB	Not limit checked.
Gain (Channel B RMS)	-0.008 dB	Not limit checked.
Settings: Generator relative, 22 Hz - 22 kHz, unweighted RMS with 1/3rd octave band-pass filter at the generator frequency		

Gain Linearity and 4+HD+N vs Amplitude - 440 Hz

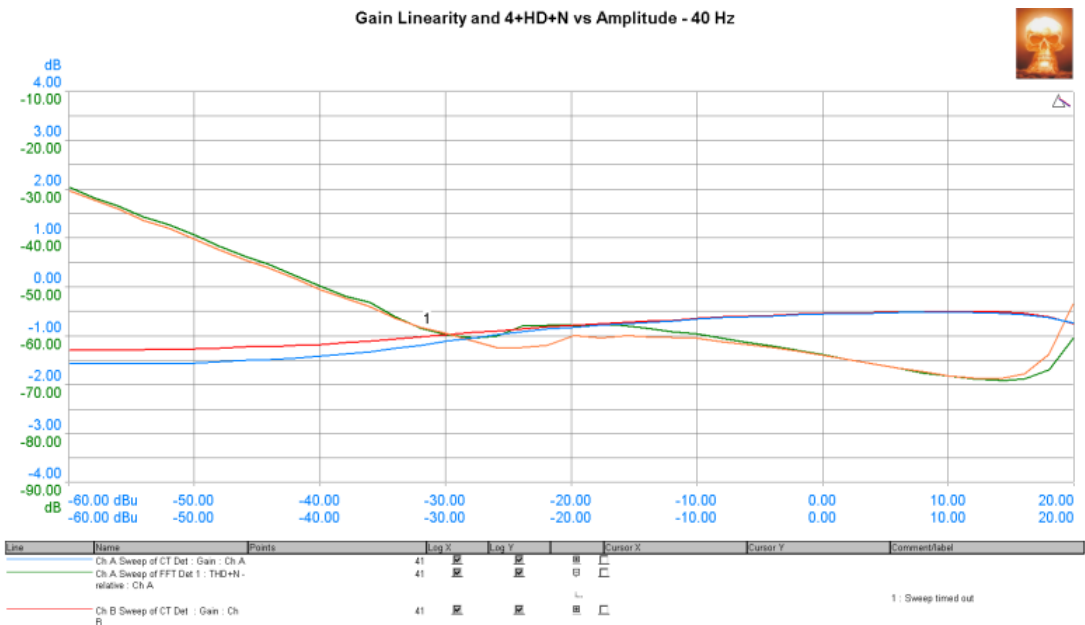

[Back to top](#)

A19 - gain linearity 4+HD+N - unBal output - 40Hz: Not limit checked.

Measured at 11/29/2020 1:41:09 PM

Signal Analyzer Readings		
Frequency (Channel A)	40.000 Hz	Not limit checked.

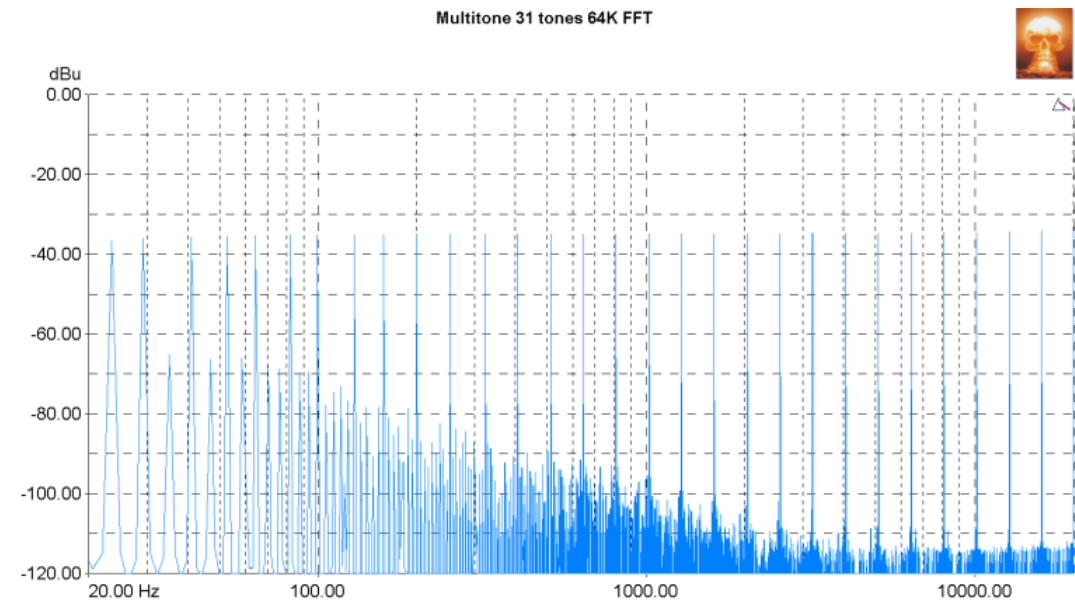
CTA Readings		
Gain (Channel A RMS)	-0.564 dB	Not limit checked.
Gain (Channel B RMS)	-0.550 dB	Not limit checked.
Settings: Generator relative, 22 Hz - 22 kHz, unweighted RMS with 1/3rd octave band-pass filter at the generator frequency		



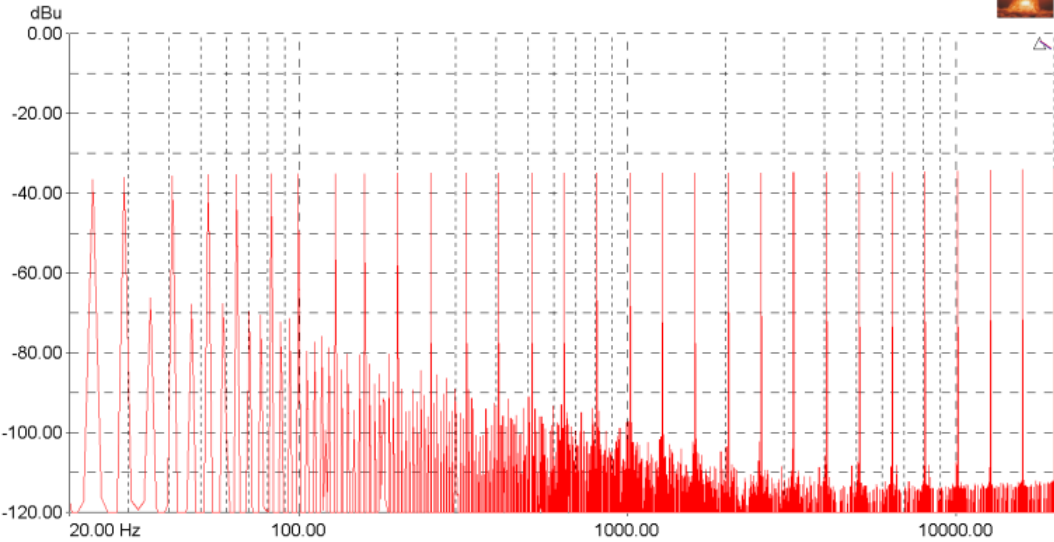
A20_MT_Analogue_31Tones: Not limit checked.

Measured at 11/29/2020 1:42:13 PM

Signal Analyzer Readings		
RMS amplitude (Channel A)	-20.849 dBu	Not limit checked.
RMS amplitude (Channel B)	-20.776 dBu	Not limit checked.



Multitone 31 tones 64K FFT



FFT Detector Readings		
User: TD (Channel A)	105.648 dB	Not limit checked.
User: TD (Channel B)	108.044 dB	Not limit checked.
FFTD 1 Settings: User: TD		
User: Noise (Channel A)	-82.484 dBu	Not limit checked.
User: Noise (Channel B)	-82.747 dBu	Not limit checked.
FFTD 2 Settings: User: Noise		
User: TD+N (Channel A)	105.648 dB	Not limit checked.
User: TD+N (Channel B)	108.044 dB	Not limit checked.
FFTD 3 Settings: User: TD+N		
User: LF Rolloff (Channel A)	-14.081 dB	Not limit checked.
User: LF Rolloff (Channel B)	-9.375 dB	Not limit checked.
FFTD 4 Settings: User: LF Rolloff		
User: HF Rolloff (Channel A)	-0.444 dB	Not limit checked.
User: HF Rolloff (Channel B)	3.246 dB	Not limit checked.
FFTD 5 Settings: User: HF Rolloff		